Pending Claims

The following listing of claims replaces all prior versions and listings of claims in this application:

Listing of Claims

1. (Withdrawn) A packaging cushion insert useful for cushioning a packaged object, the insert comprising:

a top sheet;

a bottom sheet; and

a plurality of interior sheets between the top and bottom sheets, wherein:

the top sheet, the bottom sheet, and the plurality of interior sheets are in stacked arrangement;

the top sheet is attached to a first sheet of the plurality of interior sheets;

the bottom sheet is attached a second sheet of the plurality of interior sheets; and

each of the plurality of interior sheets is attached to at least one other sheet of the plurality of interior sheets;

the top sheet, bottom sheet, and plurality of interior sheets each comprise air-cellular cushioning material.

2. (Withdrawn) The insert of claim 1 wherein each of the plurality of interior sheets are directly attached to at least one other sheet of the plurality of interior sheets.

3. (Withdrawn) The insert of claim 1 wherein each of the plurality of interior sheets are adhered by adhesive to at least one other sheet of the plurality of interior sheets.

4. (Withdrawn) The insert of claim 1 wherein each of the plurality of interior sheets are adhered by heat seal to at least one other sheet of the plurality of interior sheets.

5. (Withdrawn) The insert of claim 1 wherein at least one of the top and bottom sheets defines an aperture to accommodate insertion of at least a portion of the packaged object within the aperture, whereby the insert surrounds at least a portion of the packaged object.

6. (Withdrawn) The insert of claim 1 wherein:

at least one of the top and bottom sheets defines a first aperture;

at least one of the plurality of interior sheets defines a second aperture; and

the first and second apertures are aligned to accommodate insertion of at least a portion of the packaged object within the first and second apertures, whereby the insert surrounds at least a portion of the packaged object.

7. – 8. (Canceled)

9. (Withdrawn) The insert of claim 1 wherein the air cellular cushioning material comprises a plurality of air cells and the air cells of adjacent sheets comprising air cellular material are in offset arrangement.

10. (Withdrawn) The insert of claim 1 wherein the air cellular cushioning material comprises a plurality of air cells having diameter of from about 0.25 inches to about 1 inch.

11. – 14. (Canceled)

15. (Withdrawn) A method of making a packaging cushion insert useful for cushioning an object comprising the following steps:

selecting the dimensions of a top sheet, a bottom sheet, and a plurality of interior sheets based on the shape of the object;

cutting the top sheet, bottom sheet, and plurality of interior sheets to the selected dimensions;

placing the top sheet, the bottom sheet, and the plurality of interior sheets in stacked arrangement with the plurality of interior sheets between the top and bottom sheets; and

attaching the top sheet to a first sheet of the plurality of interior sheets;

attaching the bottom sheet to a second sheet of the plurality of interior sheets; and

attaching each of the plurality of interior sheets to at least one other sheet of the plurality of interior sheets, wherein the top sheet, bottom sheet, and plurality of interior sheets comprise air-cellular cushioning material.

16. (Withdrawn) The method of claim 15 wherein the placing step occurs subsequent to the cutting step.

17. (Withdrawn) The method of claim 15 wherein each sheet is cut to its selected dimension before placing the sheet in stacked arrangement.

18. (Withdrawn) The method of claim 15 further comprising the step of digitally modeling the object before the selecting step.

19. (Withdrawn) The method of claim 15 wherein each attaching step comprises heat sealing.

20. (Withdrawn) The method of claim 15 wherein each attaching step comprises adhesively attaching.

21. (Previously presented) A machine for making a packaging cushion insert from sheet stock of cushioning material, the machine comprising:

a conveyor adapted to movably support sequential discrete sheets of desired shapes; and

a platform below the conveyor adapted to receive the discrete sheets from the conveyor, wherein the platform and conveyor are movable relative each other:

i) to place the discrete sheets in stacked arrangement on the platform when receiving the discrete sheets from the conveyor; and

ii) to compress the stacked arrangement of discrete sheets between the platform and the conveyor to produce the packaging cushion insert.

22. (Previously presented) The machine of claim 21 wherein:

the conveyor is adapted to movably support the sheet stock; and

the machine further comprises one or more cutting heads movable transversely and longitudinally relative to the conveyor and adapted to cut the sheet stock supported by the conveyor into the discrete sheets.

23. (Previously presented) The machine of claim 22 further comprising a computerized controller for controlling the movements of the conveyor, the one or more cutting heads, and the platform.

24. (Previously presented) The machine of claim 21 wherein the conveyor comprises a vacuum conveyor.

25. (Previously presented) The machine of claim 21 wherein:

the conveyor is adapted to movably support the sheet stock;

the machine further comprises one or more cutting heads movable transversely and longitudinally relative to the conveyor and adapted to cut the sheet stock supported by the conveyor into the discrete sheets; and

the conveyor comprises a vacuum conveyor.

26. (Previously presented) The machine of claim 21 further comprising an adhesion station upstream from the platform and adapted to apply an adhesive to the discrete sheets.

27. (Previously presented) The machine of claim 21 further comprising a heating station upstream from the platform and adapted to heat the discrete sheets.

28. (Previously presented) The machine of claim 22 wherein the one or more cutting heads comprise:

a first set of one or more cutting heads movable transversely and longitudinally relative to the conveyor and adapted to cut inner scrap cutouts from the sheet stock supported by the conveyor; and

a second set of one or more cutting heads movable transversely and longitudinally relative to the conveyor and adapted to cut the sheet stock supported by the conveyor into sequential discrete sheets of desired shapes.

29. (Previously presented) The machine of claim 28 further comprising a vacuum head adapted to lift the inner scrap cutouts from the conveyor.

30. (Previously presented) The machine of claim 29 wherein:

the second set of one or more cutting heads is downstream from the first set of one or more cutting heads; and

the vacuum head is downstream from the first set of one or more cutting heads and upstream from the second set of one or more cutting heads.

31. (Previously presented) The machine of claim 22 wherein the one or more cutting heads are movably supported above the conveyor by rails.

32. (Previously presented) The machine of claim 22 wherein the one or more cutting heads comprise one or more water jet cutting heads.

33. (Previously presented) The machine of claim 22 wherein the one or more cutting heads comprise a plurality of cutting heads.

34. (Previously presented) The machine of claim 33 wherein the plurality of cutting heads are adapted to cut multiple sheets of the same shape oriented perpendicular to the direction of travel of the conveyor.

35. (Previously presented) The machine of claim 21 wherein the platform movable upwardly toward the conveyor to compress the stacked arrangement of discrete sheets between the platform and the conveyor to produce the packaging cushion insert.

36. (Previously presented) The machine of claim 21 wherein the platform further comprises a conveyor.

37. (Previously presented) The machine of claim 21 further comprising a sheet stock feeding system upstream of the conveyor.

38. (Previously presented) The machine of claim 37 wherein the sheet stock feeding system is adapted to supply a continuous sheet of sheet stock of cushioning material to the conveyor.

39. (Previously presented) The machine of claim 37 wherein the sheet stock feeding system is adapted to supply individual portions of sheet stock of cushioning material to the conveyor.

40. (Withdrawn) A method of making a packaging cushion insert useful for cushioning an object comprising the following steps:

providing the machine of claim 22;

supplying sheet stock to the conveyor;

conveying the sheet stock underneath the one or more cutting heads to cut the sheet stock on the conveyor and form a top sheet, a bottom sheet, and a plurality of interior sheets based on the shape of the object;

stacking the top sheet, the bottom sheet, and the plurality of interior sheets in stacked arrangement on the platform to form a stack having the plurality of interior sheets between the top and bottom sheets; and

moving the platform and conveyor relative each other to compress the stack between the platform and the conveyor to form the packaging cushion insert.

41. (Withdrawn) The method of claim 40 wherein the sheet stock comprises air-cellular cushioning material.

42. (Withdrawn) The method of claim 40 wherein the sheet stock comprises cellular foam material.

43. (Withdrawn) The method of claim 40 wherein the sheet stock comprises crumpled paper material.

44. (Withdrawn) The method of claim 40 further comprising the step of digitally modeling the object to provide the basis for computerized control of the one or more cutting heads.

45. (Withdrawn) The method of claim 40 further comprising the step of applying an adhesive to one or more of the top sheet, the bottom sheet, and the plurality of interior sheets before these sheets are stacked on the platform.

46. (Withdrawn) The method of claim 40 further comprising the step of heating one or more of the top sheet, the bottom sheet, and the plurality of interior sheets before these sheets are stacked on the platform.

47. (Withdrawn) The method of claim 40 further comprising the step of producing the sheet stock upstream of the conveyor and at the same site at which the machine is located.

48. (Currently amended) A machine for making a packaging cushion insert from sheet stock of cushioning material, the machine comprising:

a conveyor adapted to movably support the sheet stock;

one or more cutting heads movable transversely and longitudinally relative to the conveyor to define a cutting area over the conveyor, and adapted to cut the sheet stock in the cutting area over the conveyor while the sheet stock is supported by the conveyor into sequential discrete sheets of desired shapes; and

a platform adapted to receive the discrete sheets from the conveyor, wherein the platform and conveyor are movable relative each other:

i) to place the discrete sheets in stacked arrangement on the platform when receiving the discrete sheets from the conveyor; and

ii) to compress the stacked arrangement of discrete sheets to produce the packaging cushion insert.

49. (Previously presented) The machine of claim 48 wherein the platform and conveyor are movable relative each other to compress the stacked arrangement of discrete sheets between the platform and the conveyor to produce the packaging cushion insert.

50. (Previously presented) The machine of claim 48 wherein the conveyor comprises a vacuum conveyor.

51. (Currently amended) A machine for making a packaging cushion insert from sheet stock of cushioning material, the machine comprising:

a plurality of cutting heads movable transversely and longitudinally relative to the sheet stock and adapted to cut the sheet stock into discrete sheets of desired shapes;

a conveyor belt adapted to movably support the discrete sheets; and

a platform adapted to receive the discrete sheets from the conveyor belt, wherein the platform and conveyor belt are movable relative each other:

i) to place the discrete sheets in stacked arrangement on the platform when receiving the discrete sheets from the conveyor belt; and

ii) to compress the stacked arrangement of discrete sheets to produce the packaging cushion insert.

52. (Currently amended) The machine of claim 51 wherein the plurality of cutting heads are adapted to cut multiple sheets of the same shape oriented perpendicular to the direction of travel of the conveyor belt.

53. (Currently amended) The machine of claim 51 wherein the platform is below the conveyor belt.

54. (Currently amended) The machine of claim 51 wherein the platform and conveyor belt are movable relative each other to compress the stacked arrangement of discrete sheets between the platform and the conveyor belt to produce the packaging cushion insert.

55. (Previously presented) The machine of claim 51 wherein the plurality of cutting heads comprise water jet cutting heads.

56. (Withdrawn) A method of making a plurality of packaging cushion inserts useful for cushioning an object comprising the following steps:

providing the machine of claim 51;

supplying sheet stock to the machine;

cutting a plurality of tops sheets to have the same shape, bottom sheets to have the same shape, and interior sheets to have the same shape;

arranging the plurality of top sheets perpendicular to the direction of travel of the conveyor;

arranging the plurality of bottom sheets perpendicular to the direction of travel of the conveyor;

arranging the plurality of interior sheets perpendicular to the direction of travel of the conveyor; and

forming on the platform a plurality of stacks each having an interior sheet between a top sheet and a bottom sheet.

57. (Withdrawn) The method of claim 56 further comprising moving the platform and conveyor relative each other to compress the plurality of stacks between the platform and the conveyor to produce the plurality of packaging cushion inserts.